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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/784,631	02/15/2001	Jose A. Fernandez-Pol	42108.0106	2674

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EXAMINER
COPPINS, JANET L

ART UNIT	PAPER NUMBER
1625	

DATE MAILED: 04/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/784,631	Applicant(s) FERNANDEZ-POL, JOSE A.	
	Examiner Janet Coppins	Art Unit 1625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *THREE* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.

2. Claims 1-12 are rejected under 35 U.S.C. § 101 because the claimed inventions are directed to nonstatutory subject matter. The aforementioned claims are drafted in terms of "use", however "use" is not one of the statutory classes of invention. Claims 1-12 are rejected under 35 U.S.C. 101 because the claimed recitation of the "use of chelating agents," without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-12 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-12 provide for the use of chelating agents, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced. Claims must, under modern claim practice, stand alone to define invention, and incorporation into claims by express reference to

specification and/or drawings is not permitted except in very limited circumstances. Ex parte Fressola, 27 USPQ2d 1608 (1993).

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 2 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for treating human carcinoma cells *in vitro*, does not reasonably provide enablement for treating all cancers. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. For example, the cancer therapy art remains highly unpredictable. The various types of cancers have different causative agents, involve different cellular mechanisms, and, consequently, differ in treatment protocol. Therefore, based on the unpredictable nature of the invention and state of the prior art and the extreme breadth of the claims, one skilled in the art could not use the claimed invention without undue experimentation. The applicant would be entitled to the specific cancers disclosed in the specification, i.e. specific cell lines and carcinomas.

7. Claims 3 and 4 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for treating certain viruses, does not reasonably provide enablement for treating all upper respiratory or pulmonary diseases. The specification does not give any guidance as to the full range of upper respiratory/ pulmonary diseases which could be treated or prevented using the instant claimed "chelating agents." In In re Wands, 8 USPQ2d

1400 (1988), factors to be considered in determining whether a disclosure meets the enablement requirement of 35 U.S.C. § 112, first paragraph, have been described. They are:

1. the nature of the invention,
2. the state of the prior art,
3. the predictability or lack thereof in the art,
4. the amount of direction or guidance present,
5. the presence or absence of working examples,
6. the breadth of the claims,
7. the quantity of experimentation needed, and
8. the level of the skill in the art.

In the instant case, Applicants are claiming a method of preventing or treating upper respiratory/ pulmonary diseases. The nature of the pharmaceutical arts is that it involves screening in vitro and in vivo to determine which compounds exhibit the desired pharmacological activities. There is no absolute predictability even in view of the seemingly high level of skill in the art. The existence of these obstacles establishes that the contemporary knowledge in the art would prevent one of ordinary skill in the art from accepting any therapeutic regimen on its face. The instant specification does not give any guidance as to the full range of upper respiratory or pulmonary diseases which could be treated or prevented using the instant claimed "agents." In order to practice the claimed invention, one skilled in the art would have speculate which upper respiratory or pulmonary disease could be treated or prevented using the metal chelating agents found in the instant claims. The number of possible upper respiratory or pulmonary diseases embraced by the claims would impose undue experimentation on the skilled art worker. Therefore, the broad terminology "prevention and treatment of upper respiratory diseases" and "prevention and treatment of pulmonary diseases" is not enabled because the metes and bounds of the diseases which could be treated or prevented using the chelating agents found in the instant claims cannot be ascertained.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

9. Claim 1 rejected under 35 U.S.C. 102 (a) as being anticipated by Valerio et al (WO 9624610, 07/15/96). Valerio et al. patent discloses a chelating agent of Formula I, and combinatorial libraries of compounds and derivatives of Formula I; see page 2, column 1. Valerio et al. also teaches diseases mediated by uPA, for example angiogenesis; see page 3 column 4, paragraph 2. Valerio et al. discloses and claims the use of chelating agents for treating uPA-mediated disorders such as angiogenesis. The publication date of the WO precedes the effective date of the instant patent application by 10 weeks.

10. Claim 8 rejected under 35 U.S.C. 102 (a) as being anticipated by DeCicco et al. (WO 9427436, 1994). DeCicco et al. patent describes metal chelating agents and their antimicrobial effectiveness when combined with quaternary ammonium compounds (see pages 9 and 11, Tables 3 and 5). Therefore DeCicco et al. disclose and claim the use of metal chelating agents as preservatives. The publication date of the WO precedes the effective date of the instant patent application by 2 years.

11. Claim 2 rejected under 35 U.S.C. 102(b) as being anticipated by Mease et al. (US005292938, 1994). Mease et al. disclose metal chelating agents and their derivatives and analogs; see page 3, columns 3 and 4. Synthesis of chelating agents CDTAMA and DTPADA is demonstrated; see page 4, schemes 1 and 2. Said chelating agents are also injected into nude tumor mice and decreased tumor uptake is reported. Therefore Mease et al. disclose the method of using injectable chelating agents as cancer treatment; see pages 5-8 and Tables 1-14.

12. Claim 4 rejected under 35 U.S.C. 102 (b) as being anticipated by Dutta et al. (US004596789, 1986). Dutta et al. disclose derivatives of chelating agents, "proline derivatives"; see page 3 columns 1 and 2. Synthesis and preparation of said derivatives in the form of pharmaceutical compounds is described; see pages 4-9, columns 3-13. Dutta et al. reports the administration of said compounds to "an animal or human in need thereof, for the alleviation of conditions including pulmonary emphysema" via powder or liquid aerosol; see page 10, column 15, paragraph 4. Therefore Dutta et al. disclose the use of said compounds as inhalation therapy for treatment of pulmonary disease.

13. Claims 3, 5, and 7 rejected under 35 U.S.C. 102 (b) as being anticipated by Weier et al. (US005262426, 1993). Weier et al. disclose chelating agents, "imidazopyridines" and their derivatives and analogs; see especially Formula I, and pages 2-7, columns 2-12,. Weier et al. also reports the Platelet Activation Factor (PAF)-antagonistic activity demonstrated by the compound of Formula I; see page 16, column 29, Table 1. Inhibition of PAF by said Compound thereby causes a reduction in inflammatory processes mediated by PAF. Such processes include general inflammation, inflammation of the tracheobronchial tree (acute and chronic bronchitis), and immunological diseases; see page 7, column 12, paragraphs 3 and 4. Therefore Weier et al.

describes the use of said chelating agent in the form of a pharmaceutical composition as an anti-inflammatory; see page 7, column 12, paragraph 3. Weier et al. disclose the use of said compound to induce an immune response; see page 7, column 12, paragraph 4. Weier et al. also disclose the use of said compound as effective treatment for diseases of the pulmonary passages, including upper respiratory infections; see page 7, column 12, paragraph 4.

14. Claim 6 rejected under 35 U.S.C. 102 (b) as being anticipated by Phillipp et al. (US004420476, 1983). Phillipp et al. disclose benzofuropyrazol-amine derivative compounds, represented by Formula I, page 2, and their combinations with complex metal hydrides, defined as metal reducing agents; see page 3, columns 3 and 4. Phillipp et al. describe the analgesic effects of said compounds in mammals; see page 4, column 5. Therefore Phillipp et al. disclose the use of said compounds as analgesic agents; see page 4, column 6.

15. Claims 9-11 rejected under 35 U.S.C. 102 (b) as being anticipated by Gibby (US004822594, 1989). Gibby discloses metal chelating agents, and their affinity for metal ions; see page 2, column 2. In metal poisoning, heavy metals such as copper, iron, and lead build up in the liver, where chelating agents are metabolized (see page 3, column 3, paragraph 5). When administered internally, said chelating agents bind to excess metal ions and remove toxic metal from he liver; see page 3, column 3. Therefore Gibby discloses and claims administering internally metal chelating agents for the treatment of heavy metal poisoning, including Wilson's disease, iron overload, and lead poisoning.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janet Coppins whose telephone number is 703.308.4422. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alan Rotman can be reached on 703.308.4698. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9306 for regular communications and 703.872.9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.1235.

JLC
March 22, 2002

Alan L Rotman

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